



# A national survey of residents in combined Internal Medicine and Dermatology residency programs: educational experience and future plans.

## Citation

Mostaghimi, Arash, Karolyn Wanat, Bradley H. Crotty, and Misha Rosenbach. "A national survey of residents in combined Internal Medicine and Dermatology residency programs: educational experience and future plans." *Dermatology online journal* 21, no. 10 (2015).

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**Peer Reviewed****Title:**

A national survey of residents in combined Internal Medicine and Dermatology residency programs: educational experience and future plans

**Journal Issue:**

[Dermatology Online Journal, 21\(10\)](#)

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**Publication Date:**

2015

**Permalink:**

<http://escholarship.org/uc/item/3dp4w5g0>

**Keywords:**

medical dermatology, dermatology education, residency, combined programs, resident satisfaction, med/derm

**Local Identifier(s):**

doj\_28944

**Abstract:**

**Importance:** In response to a perceived erosion of medical dermatology, combined internal medicine and dermatology programs (med/derm) programs have been developed that aim to train dermatologists who take care of medically complex patients. Despite the investment in these programs, there is currently no data with regards to the potential impact of these trainees on the dermatology workforce.

**Objective:** To determine the experiences, motivations, and future plans of residents in combined med/derm residency programs.

**Design, Setting, and Participants:** We surveyed residents at all United States institutions with both categorical and combined training programs in spring of 2012. Respondents used visual analog scales to rate clinical interests, self-assessed competency, career plans, and challenges.

**Main Outcomes and Measures:** The primary study outcomes were comfort in taking care of patients with complex disease, future practice plans, and experience during residency.



Results: Twenty-eight of 31 med/derm residents (87.5%) and 28 of 91 (31%) categorical residents responded (overall response rate 46%). No significant differences were seen in self-assessed dermatology competency, or comfort in performing inpatient consultations, cosmetic procedures, or prescribing systemic agents. A trend toward less comfort in general dermatology was seen among med/derm residents. Med/derm residents were more likely to indicate career preferences for performing inpatient consultation and taking care of medically complex patients. Categorical residents rated their programs and experiences more highly.

Conclusions and Relevance: Med/derm residents have stronger interests in serving medically complex patients. Categorical residents are more likely to have a positive experience during residency. Future work will be needed to ascertain career choices among graduates once data are available.

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**Original**

**A national survey of residents in combined Internal Medicine and Dermatology residency programs: educational experience and future plans**

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**Dermatology Online Journal 21 (10): 3**

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**Importance:** In response to a perceived erosion of medical dermatology, combined internal medicine and dermatology programs (med/derm) programs have been developed that aim to train dermatologists who take care of medically complex patients. Despite the investment in these programs, there is currently no data with regards to the potential impact of these trainees on the dermatology workforce.

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## Introduction

Traditionally, dermatologists completed a full 3-year residency in internal medicine before training in dermatology. In 1986, changes in Medicare reimbursement for graduate medical education restricted funding for dermatology trainees to an internship and three years of dermatology residency, eliminating payment for those seeking broader training in medicine. This change, coupled with expanded numbers of minor surgical and cosmetic procedures, was felt to contribute to the redistribution of treatment of dermatologic diseases with significant systemic manifestations to other medical specialties, including rheumatology, oncology, and infectious disease [1-3].

Dermatologists' lack of comfort with medically complex patients has also been cited as one of the contributing factors to a reduction in the number of dermatologists willing to provide inpatient consultations [4,5]. In addition to depriving patients of dermatologic care, limited access to dermatology for inpatient consults has been identified by a 2011 American Academy of Dermatology survey as one of the five key negative perceptions of dermatologists by their physician colleagues [6].

In response to this perceived erosion of medical dermatology, the Medical Dermatology Society (MDS) was founded in 1996 with the goal of supporting medical dermatologists and their patients [7]. One initiative led by the MDS was the creation of an American Board in Internal Medicine/American Board of Dermatology (ABIM/ABD) dually certified residency program that allows trainees to be board-eligible for both internal medicine and dermatology after the completion of 60 months of training. The combined program requires residents to complete an internal medicine internship followed by a full year of dermatology. The 3rd through 5th years of the program are interdigitated, with residents rotating between internal medicine and dermatology rotations every 2 to 3 months (depending on the individual program) [2,8]. Despite the investment in these programs, little is known about the experiences, motivations, and future career plans of residents in combined internal medicine/dermatology (med/derm) programs. To date, there is no clear evidence that residents in combined programs plan to have careers that are different from their traditionally trained colleagues. We sought to determine the experiences, motivations, and future plans of residents in combined med/derm residency programs.

We have three hypotheses guiding our project: (1) Residents in med/derm programs will feel more comfortable with complex therapies and patients than residents in categorical dermatology programs; (2) Graduates from med/derm programs are more likely to choose careers centered on taking care of patients with more complex disease; and (3) Residents in med/derm programs are satisfied with the quality of their training.

## Methods:

Our study population consisted of combined med/derm residents and their traditional dermatology counterparts at all United States training institutions that offered both training programs at the time of the survey (Washington Hospital Center; Northwestern University; Louisiana State University; Harvard Combined Program; University of Minnesota; University of Pennsylvania; University of Wisconsin).

An anonymous survey was created and administered through REDCap software (Vanderbilt University) [9]. Participants provided basic demographic information. No individually identifiable data was collected. Participants were solicited via emails from their program administrators and via direct email communication. Respondents answered questions regarding residency experience using a non-anchored visual analog scale ranging from 0 (Completely Disagree) to 100 (Completely Agree). Questions focusing on challenges of a combined program and future plans were answered using a multiple-choice selection and with a possible answer of "other" using free text.

The data was analyzed using a Wilcoxon Rank Sum Test. Statistical analyses were performed using SAS software, version 9.1 (SAS Institute Inc, Cary, NC). This study was reviewed and approved by the University of Pennsylvania Institutional Review Board.

## Results:

Of the 32 residents in combined med/derm programs nationwide, 28 responded (87.5%). Twenty-eight of 91 categorical dermatology residents replied (31%), for an overall response rate of 46%. The age and level of training by postgraduate year (PGY) were equivalent between categorical and med/derm residents (Table 1). Categorical dermatology residents were more likely to be female and to have a PhD.

Med/derm and categorical residents demonstrated differences in their self-perception of competency. We identified trends towards categorical residents being more likely to feel that they will be competent in dermatology upon completion of their program (86.9 versus 82.3,  $p = 0.053$ ) and towards med/derm residents feeling more comfortable taking care of patients with significant non-dermatologic co-morbidities (81.8 versus 70.3,  $p = 0.075$ ). Seventy-six percent of med/derm residents reported feeling that they would be competent in internal medicine upon graduation. Categorical dermatology residents were more likely to feel comfortable performing dermatologic surgical procedures (80.3 versus 69.6,  $p = 0.029$ ). There were no differences noted in comfort levels around performing inpatient dermatology consultations, cosmetics procedures, or in prescribing and monitoring systemic agents.

Categorical and med/derm residents had divergent plans for after graduation (Figure 1). Both groups displayed an interest in doing general dermatology (categorical = 61.3%, med/derm = 75.0%). However, med/derm residents were more likely to indicate a future interest in inpatient consultation (46.4% versus 14.3%), connective tissue disease (60.7% versus 10.7%), psoriasis (39.3% versus 3.5%), immunobullous disease (39.3% versus 7.1%), and infectious disease (42.9% versus 10.7%).

Both categorical and med/derm residents expressed interest in future careers in academia (89% categorical, 68% med/derm), with many med/derm residents suggesting future desire to be clinically active in internal medicine as well as dermatology (Table 3).

In evaluating their residency experience (Table 2), categorical dermatology residents were more likely to report a positive experience in their residency program (87.0 versus 71.5,  $p = 0.001$ ), to recommend their residency program to others (median 89.4 versus 61.9,  $p < 0.0001$ ), and to reflect that they would make the same decision to enter their residency program (median 83.5 versus 62.0,  $p < 0.0001$ ). Forty-three percent of med/derm residents would, in retrospect, prefer to have done a categorical dermatology residency, whereas 17.4% would, in retrospect, have preferred a categorical medicine residency. Both categories of residents felt equally socially integrated in their dermatology programs.

Med/derm residents report scheduling as the most challenging issue in their residency program (75%, Figure 2). Transitions from dermatology back into medicine were also identified as a major challenge (71%). Preparation for the dermatology in-service exam was considered challenging by 50% of all med/derm residents. Social integration into their residency programs, attending conferences, and meeting research obligations were not identified as major concerns.

## Discussion:

Our study demonstrates that med/derm residents are (1) less likely to feel as competent in dermatology, (2) more likely to want to take care of complex patients upon graduation, and (3) less satisfied with the quality of their training than their categorical colleagues. These data suggest simultaneously the promise and the challenge of med/derm residency programs.

These results show that residents in med/derm programs are fundamentally different in their career plans and outlook than their categorical peers. They consistently reflect a greater desire to take care of patients with more complicated disease. Med/derm residents are also more likely to reflect a future interest in performing inpatient dermatology consults (46.4%) than categorical residents (14.3%). This data is consistent with preliminary data from a nationwide survey in which nearly half of all graduates of med/derm programs perform inpatient consults [10].

The desire of 68% of med/derm residents to enter careers in academia is also promising and reflects the commitment of these residents to advancing their field. The contrasting 89% rate among categorical dermatologists is much higher than nationwide survey data that suggest only 38% of graduating residents felt that academia would be part of their dermatology practice 5 years after graduation [11]. This discrepancy likely reflects in part a sampling bias given the programs that were surveyed.

Together, these results support the original mission of med/derm programs, which was to revitalize medical dermatology by training dermatologists specifically trained to take care of more complicated patients. Although combined internal medicine and dermatology training is not required to take care of complex patients, dually trained physicians were more comfortable managing patients with significant co-morbid medical diseases, and were more likely to choose careers caring for these complicated patients suggests that the investment in additional training may be justified.

Although the end goals of med/derm training may be realized, at present it is clear that med/derm residents do not have as positive an experience in residency as their categorical colleagues. They are less likely to recommend their residency program or to suggest that they would make the same decision to enter a med/derm program. Despite their additional training, med/derm residents are less likely to feel as competent in dermatology. Given the opportunity, nearly 1 out of 5 med/derm residents would prefer to have gone into internal medicine and another 2 out of 5 would have chosen categorical dermatology.

The root cause of these results is difficult to determine. Med/derm residents spend half their time in dermatology and half their time in medicine—the differences may be more a function of success among dermatology programs in promoting resident happiness versus a failure in med/derm programs. This study does not include an evaluation of corresponding medicine residency programs and no comparable nationwide data exists. However, data from other combined programs, including internal medicine/pediatrics and internal medicine/emergency medicine reflect that, if given the option, 88% and 94% of residents respectively would choose to train again in those same specialties [12, 13]. Compared to those numbers, med/derm programs may have room for improvement.

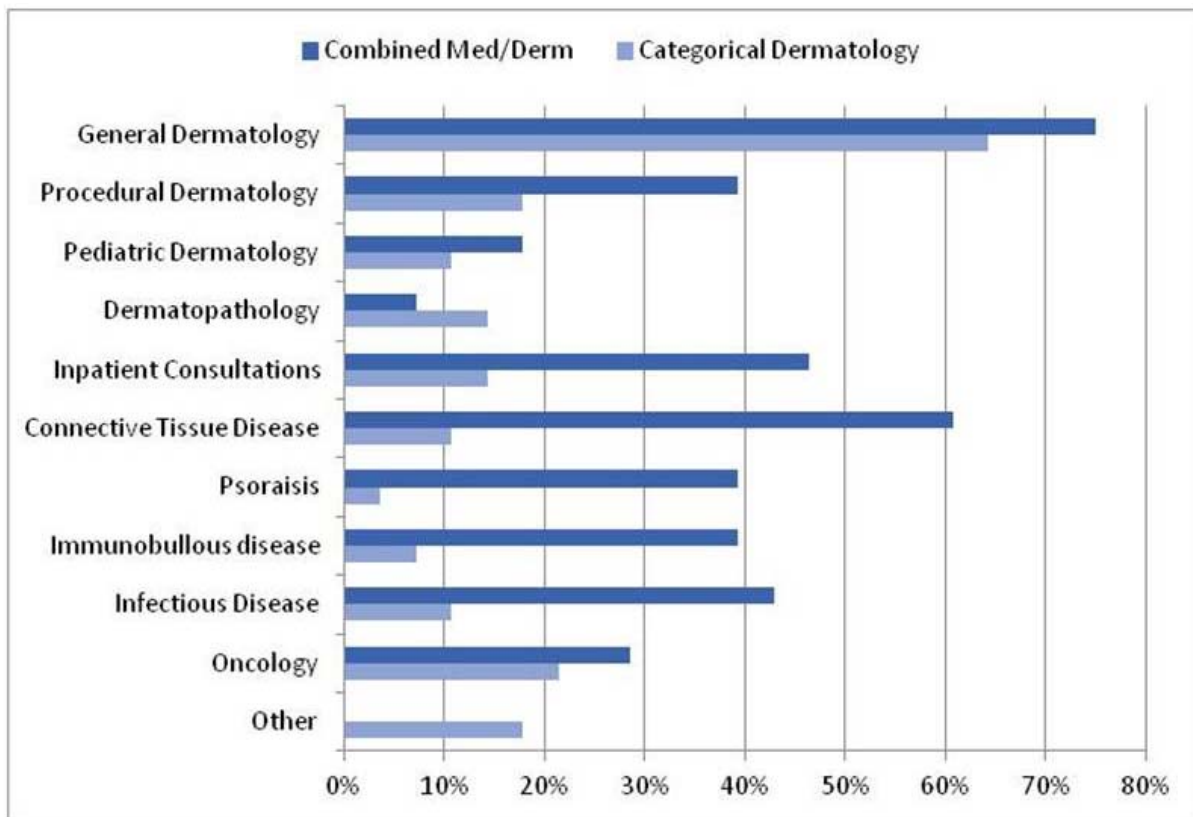
The self-identified main challenges of the med/derm experience do suggest that logistical scheduling and transition challenges are a central issue. Increased regulation of resident work-hours has put stress on scheduling within independent residency programs that is magnified in combined programs. With added experience, adjustments in the block length (number of months in medicine or dermatology at one time) and specific rotation order may improve scheduling concerns and ease the transition from dermatology back into internal medicine. Similar adjustments may enable med/derm residents to improve their ability to prepare for the dermatology inservice exam.

In 2013, the ABIM/ABD approved an alternative scheduling pathway for med/derm programs, allowing residents to spend the bulk of their first two years training in internal medicine, including the majority of ICU rotations, and then transition to dermatology, with the fourth and fifth year focusing on cross-disciplinary electives and dedicated complex medical dermatology rotations. This structure may offset some of the stress and scheduling challenges felt by trainees in the combined program. Further research is required to determine if this alternative schedule improves resident experience.

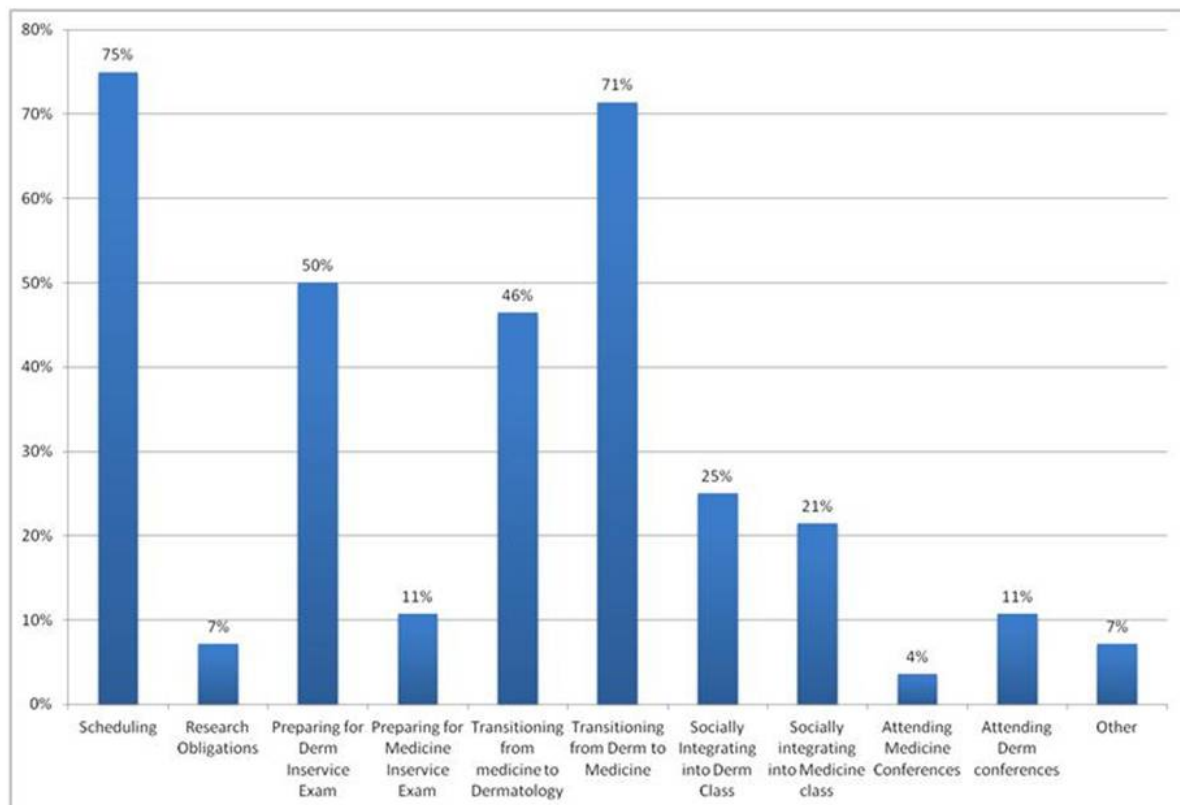
These data must be interpreted in the context of the study design. Although the response rate among med/derm residents was high, the lower response rate from categorical dermatology residents may limit our ability to compare the two groups. We did not have information from the corresponding categorical medicine residents and cannot compare the med/derm experience to that of their internal medicine colleagues. Furthermore, perception of competence is different from actual competence; we do not have any quantitative data to suggest that the knowledge base or abilities are different between med/derm and categorical residents. Lastly, the desire to choose careers focusing on medically complex patients may reflect more about the person and not the program. Med/Derm programs may be capturing residents who would choose the same career path even if they were in traditional categorical dermatology residencies.

Although our data provide a good starting point, a comprehensive evaluation of the merits of combined internal medicine/dermatology programs cannot be performed until a longitudinal evaluation of graduates from these programs is possible. Current estimates suggest that 6-10 residents are graduating from med/derm programs every year. The total number of graduates 20-30, with the vast majority within 5 years of graduation. In a decade, will this cohort of med/derm graduates fulfill their goals of taking care of complicated patients within dermatology, or will they be indistinguishable from their traditionally trained colleagues?

In the interim, we should continue to support residents in existing programs by pooling the collective experience of these programs and identifying best practices that provide quality training while improving resident satisfaction.



**Figure 1.** Clinical Areas of Interest Upon Graduation. Respondents were asked which whether they hoped to incorporate the following clinical fields into their future careers. Percent responding “Yes” are shown in the figure below. Med/Derm (n=28) residents in dark, categorical residents (n=28) in light.



**Figure 2.** Med/Derm Challenges. Percentage of med/derm respondents reporting each area as a “challenge.”



**Table 1.** Respondent Demographics

	Dermatology (n=28)	Med/Derm (n=28)
Age	31.6	30.6
% Female	67.9%	50.0%
% PhD	25.0%	0%
% Other Advanced Degree	17.9%	25%
Average PGY Year	2.9	3.0

**Table 2.** Resident Experience

Question	Dermatology	Combined Med/Derm	P
I have had a positive experience in my residency.	87.0	71.5	0.001
I would recommend my residency to others.	89.4	61.9	<0.0001
I would recommend this specific program to others.	89.1	70.6	0.000
Knowing what I know now I would make the same decision to enter this program.	87.3	62.0	<0.0001
I feel like I am socially integrated into my dermatology program.	83.5	75.5	0.131
Upon completing my residency I will be competent in dermatology.	86.9	83.3	0.053
I feel comfortable prescribing and monitoring most systemic medications used in dermatology (i.e. cyclosporine, methotrexate, biologic agents).	72.5	74.3	0.831
I feel comfortable taking care of patients with significant non-dermatologic co-morbidities.	70.3	81.8	0.075
I feel comfortable performing inpatient consults.	84.3	83.6	0.863
I feel comfortable performing dermatologic surgical procedures.	80.3	69.6	0.029
I feel comfortable performing cosmetic procedures.	54.3	48.0	0.510

**Table 3.** Future Plans

	Categorical	Med/Derm
All Academic	89%	68%
All Private or Other	11%	32%
Subset:		

Academic Dermatology	89%	39%
Academic Combination Internal Medicine and Dermatology		29%
Private Practice Dermatology	11%	14%
Private Practice IM		7%
Private Practice Combination		7%
Other		4%

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